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RP:0151

Mr. Vern Christianson (H-3-2)
U.S. EPA, Region IX
75 Hawthorne Street
San Francisco, California 94105

Dear Mr. Christianson:

Draft Hazardous Waste Treatment Permit
for Open Burn/Open Detonation
U.S. Army, Makua Military Reservation
Schofield Barracks, Oahu

The U.S. Army Makua Military Reservation, as a subinstallation of the 25th Infantry (Light) Schofield Barracks, Hawaii, has submitted a Draft Hazardous Waste Treatment Permit Application for open burn/open detonation (OB/OD) of various waste munitions and ordnance. The permit would be granted in accordance with the Resource Conservation and Recovery Act (RCRA), Title 40 of the Code of Federal Regulations (CFR) Part 124, as authorized by the 1984 Hazardous and Solid Waste Amendments to RCRA. The waste munitions are from other military installations in Hawaii, and are considered hazardous because of their energetic nature (able to burn or explode) and chemical properties. Open burns will occur in a specially designed burn pan whereas detonations occur on ground in direct contact with the soil and air. The facility presently operates under the Interim Status requirements of RCRA.

The Environmental Center has reviewed the application with the assistance of Paul Ekern (Emeritus), Agronomy and Soil Science; Roy Takekawa, Environmental Health and Safety; Michael Hadfield, Cytology/Zoology; Casey Jarman and Douglas Codiga, Richardson School of Law; and John Harrison and Andrew Tomlinson of the Environmental Center.

General Comments

As presently drafted, the RCRA permit application for the continued disposal of hazardous wastes by OB/OD at the Makua Military Reservation(MMR) contains insufficient information for informed decision-making. We have noted problems and deficiencies

associated with the modelling and environmental risk assessment in the application. In addition, there has been a serious lack of complete public disclosure in the permitting process and many important questions and concerns of the community remain unanswered. These questions and concerns relate to the past, present, and future hazards to the natural environment and the public health of the local community from military activities in Makua Valley. They also include many land use questions related to general military use of the Makua Valley. Due to the nature of the material being disposed of by OB/OD, the presence of endangered species, the potential hazards to the environment and adjacent communities, and the lack of full public disclosure, we strongly recommend that a complete and comprehensive **Environmental Impact Statement (EIS)**, concerning **all military** activities in Makua Valley, be prepared as required by the National Environmental Protection Act (NEPA) and Chapter 343, State of Hawaii Revised Statutes (HRS). This would enhance and consolidate the body of knowledge concerning the MMR, OB/OD operations, existing environmental conditions, potential impacts to the ecology and local community, and alternatives to the proposed OB/OD operations at Makua. The gathering and disclosure of all information related to the MMR would then enhance sound decision-making in the permitting process.

Public Disclosure

To date it appears that the permitting process has not accorded full public disclosure of the Makua Military Reservation OB/OD permit application. Presently, only five copies of the proposed permit are available for public review even though numerous requests by the Environmental Center have been made for additional copies. While we recognize that the document is large and expensive to reproduce, this cost should not be a factor inhibiting full public disclosure of a proposed action that affects a multitude of variables in Makua, including the local community and federally endangered species. Furthermore, only selected invited guests from the community were allowed to visit the MMR for a visual survey of the area. Finally, the U.S. EPA has not sponsored a formal, official process of public hearings despite widespread community interest and concern with the permit application. Clearly, this does not constitute full public disclosure and indicates there is a need for increased transparency of the Makua Military Reservation and the permit application.

RCRA Draft Permit Application

In general, the information provided in the permit application, including general facility conditions, treatment of energetic waste, corrective action, and its attendant environmental risk assessment and appendices does not accurately describe the environmental conditions in the MMR and their relationship to the hazardous wastes being discharged into the environment under the proposed permit. As a consequence, there are many questions and concerns related to the modelling and lack of sampling, endangered species, archeological sites, public health and safety, and the materials to be disposed of under the permit.

Modelling and Sampling

The soil and air pathways models, derived from tests developed on the mainland, are used to predict the possible contamination of the environment and any possible health risks for the community. However, according to Section B: F.5.3 of the draft permit application, "No sampling or analysis of the Makua Valley's sediments, surface waters, or groundwater has ever been conducted." Therefore, soil values used in the soil contamination modelling, including specific gravity and vertical infiltration characteristics, indicate that mainland soil types were used in the procedure. It is widely recognized that tropical soil types, like those on the leeward coast of Oahu, are significantly different from mainland soil varieties. In particular Lualualei soils, found in Makua Valley, exhibits distinct characteristics as compared to mainland soils. Lualualei soils are very sticky and plastic, and crack widely upon drying. As such, run-off is medium to rapid and the erosion hazard is moderate to severe. (See Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai. State of Hawaii U.S. Department of Agriculture Soil Conservation Service in Cooperation with University of Hawaii Agricultural Experiment Station, 1972, pages 84, 186, 202, 205, 207, 208, 220.)

The MMR also has conducted and continues to conduct "training related" OB/OD and live-fire operations. Thus, it can be assumed the soil is already contaminated by past and present activities and will continue to be further contaminated. According to Section B, F-9 of the draft permit application, "Considering that the area has been used for munitions demolition and military training since WWII, low level contamination of much of the surface soil of the valley is probable." As a consequence, it is impossible to make a determination of the future levels of contamination and make a credible risk assessment in the area without baseline data of existing contamination levels.

The discussion of groundwater and surface water contamination also is inadequate for an accurate assessment of the potential for contamination by hazardous wastes. The permit fails to map and sample groundwater and surface water to determine how contaminants have moved and will continue to move through local water systems in the area. According to Mink and Lau (1991), the aquifers in the Keeau System, encompassing all of Makua Valley, have varied characteristics including basal, high level, confined, unconfined, dike, and sedimentary traits. In addition, three of the four aquifers identified in the system are categorized as "irreplaceable," while all are considered to be highly or moderately susceptible to contamination. (John Mink and Stephen Lau, Aquifer Identification and Classification for O'ahu: Groundwater Protection Strategy for Hawai'i. University of Hawaii Water Resources Research Center, University of Hawaii at Manoa. Honolulu, Hawaii: 1990.) In addition, the application does not mention that the water table in the valley reaches the surface or close to the surface in many parts of the valley. This can be determined through a visual survey of the area. Finally, according to the permit application in Section B, F-9, "There are no preventive measures at MMR to ensure that contamination of the groundwater does not occur." Clearly, the applicant cannot assume groundwater used

by neighboring Makaha residents is safe without proper sampling and study of the specific geologic properties, including the aquifers and surface waters of the entire leeward coast.

In addition, the modelling for potential contamination through air pathways does not take into account the specific meteorological conditions of the Waianae Coast. The air pathways model does not include or acknowledge the presence of a "sea breeze" on the Waianae Coast that could cause local convergent zones and inversions with the usual trade winds. (Y. Noguchi, "Defamation of Trees in Hawaii and Its Relation to Wind." Journal of Ecology, Vol. 67, 1979, pp. 611-628.) Consequently, contaminants from the OB/OD operations could be suspended over the valley and the leeward coast community for periods longer than described in the permit application. The possible suspension of contaminants over the community may have direct and indirect negative affects on the ecology of the area and the local community. Sampling of air pathways should be conducted to determine how contaminants are reacting with specific meteorological conditions in the area of Makua Valley and along the Waianae Coast.

The permit application also discusses the hazards associated with MMR related fires in Makua Valley. The permit application describes fire prevention and firefighting plans that have been common practices at the MMR for years. These plans would continue to be used to safeguard the area from OB/OD ignited fires. However, past operations in the MMR, including live-fire and OB/OD operations have ignited enormous, uncontrollable fires that have ravaged the valley - reaching high to the upper rim areas where most endangered species are found. It is clear under its current fire prevention and response programs that the military is unable to guarantee that fires will not spread uncontrollably throughout the valley. This poses a direct and serious threat to the federally endangered species in the area whose habitats could be destroyed permanently as native flora is destroyed and replaced with exotic species.

Endangered Species

The application is also vague and flawed in its discussion of the various federal and state endangered species found in Makua and the impact of OB/OD contaminants on them. These include the Oahu tree snail, Achatinella mustelina(note spelling), the federally endangered birds Oahu Creeper(not a plant as described in the draft permit) and O'ahu Elepaio, and up to 26 federally endangered plant species.

Achatinella mustelina feeds exclusively on the thin films of native black molds that reside only on native Hawaiian trees. Over time, the snails may be adversely affected by aerial pollutants taken up directly by the molds, by depressed growth of the molds, or by pollutants entering the host trees through their leaf-surface areas and transferred to the molds and thus to the snails. The endangered birds may be expected to be adversely affected by smoke, by toxic aerial pollutants, or by pollutants entering their food chain. The endangered Hawaiian plant species found in Makua Valley, by their very nature, are

expected to have little or no resistance to toxic aerial pollutants, because their evolutionary history in Hawaii has occurred free of such contaminants. This lack of resistance can also be applied to soluble chemicals from OB/OD that infiltrate into plants via their root systems in the soil. Finally, humans probably do not represent the most sensitive receptors in the vicinity, contrary to claims in the permit application. Native plant and animal species in the area are probably far more susceptible to contamination. As such, the health criteria designed to accommodate health hazards for humans do not take into consideration more sensitive floral and faunal species in Makua Valley. A specific assessment of the possible contamination hazards from all military activities in Makua Valley should be completed for all endangered species and their habitats. The assessment should then be included in an EIS.

Archaeology

There was no discussion in the application of the archaeological sites found throughout Makua Valley and how OB/OD operations have in the past and will in the future affect the sites. How many sites are there in Makua Valley? How has OB/OD affected these sites and what will be done to preserve them in the future? How have MMR fires affected these sites? A specific assessment should be made of all past, present, and future military activities in Makua Valley to determine how they have affected the archaeological sites in the area.

Materials Not Covered Under the Permit

Finally, the terms of the draft RCRA permit include only a minuscule portion of the actual amount and type of ordnance and hazardous materials disposed at the MMR. OB/OD activities occur on a regular basis, disposing of any and all materials (200 tons per year) the Army deems "training related." These materials include MMR on-site ordnance and explosives used for Army Explosive Ordnance Disposal(EOD) personnel training. These materials are similar or the same to proposed RCRA permit regulated OB/OD materials. As such, they constitute hazardous waste and should be included in the permit requirements. The Army's claim to exemption of these EOD and on-site ordnance materials from RCRA requirements is not based on any clear legal statute. In fact, EOD training and destruction of on-site ordnance appear to qualify the Army as a generator of hazardous waste, which the EPA defines as "any person . . . whose act, or process produces 'hazardous waste.'" 40 C.F.R. 270.2 (1991). Therefore, the Army is required to include "training related" activities that generate hazardous wastes in their RCRA permit application.

In addition, the Army also has disposed of a wide array of materials including 350 900-pound napalm bombs, various non-ordnance organic solvents, chlorinated hydrocarbons, and hazardous wastes from the Tripler Medical Center and the University of Hawaii. These materials have not been accounted for under the RCRA permit and its attendant

environmental risk assessment. While the models incorporated the worst case scenario for the levels of contaminants, there is no definite information as to the amounts and types of materials that were disposed of in the past. Therefore, the Army and its contractors must determine the levels of contamination from past and present hazardous waste disposal activities at the MMR before a credible risk assessment can be rendered.

Conclusion

Based on the present soil and air pathways models and the incomplete and inaccurate information provided in the permit application it is improbable that a credible risk assessment can be rendered. It can be assumed by the nature of the OB/OD operations and the information provided in the draft permit application that contamination of the soil, water, and air has and will continue to occur. This continued contamination will combine with the materials that exist in Makua Valley from past and present uses of the valley to create cumulative hazardous impacts to adjacent communities and the natural environment.

Preparation of an Environmental Impact Statement

The OB/OD operations, as well as other "training related" activities, trigger the requirements for preparation of an environmental impact statement under the National Environmental Policy Act (NEPA) and Chapter 343, Hawaii Revised Statues.

Department of Defense regulations acknowledge a duty to comply with NEPA. Section 32 of the Code of Federal Regulations C.F.R., Part 651, "Environmental Effects of Army Actions (AR 200-2)," establishes criteria for determining what Army actions are categorically excluded from requirements to prepare an Environmental Impact Statement(EIS). According to NEPA, compliance is required unless existing law, applicable to a specific action or activity, prohibits, exempts, or makes compliance impossible. Section 42 U.S.C. 4332(2) (C) (1976) of NEPA states, "Agencies must prepare an environmental impact statement(EIS) on every proposal for legislation or other major federal action significantly affecting the environment." Consequently, the OB/OD of hazardous waste at Makua Military Reservation is an action that triggers NEPA regulating guidelines.

However, 32 C.F.R. 651.9(3) (C) (1991) does provide for categorical exclusions from NEPA for the Army actions that, "do not individually or cumulatively have a significant effect on the human environment." However, these regulations also state that an action should not be granted a categorical exclusion when there are, "any extraordinary circumstances that may result in the proposed action having an impact on the human environment that would require an EA or EIS." (32 C.F.R. 651.17 (1991)) This includes actions which involve, "the presence of threatened or endangered species and their habitats ... [or] [u]se of hazardous or toxic substances that may come in contact with the surrounding natural environment" 32 C.F.R. 651.17 (1991). Clearly, the past, present, and future contamination of the air, soil, and groundwater at Makua Valley by hazardous wastes does

not exempt OB/OD operations at the MMR from preparing an EIS pursuant to NEPA and Army regulations. In addition, the presence of numerous endangered species in direct contact with MMR operations in Makua Valley does not exclude the OB/OD facility from preparing an EIS.

Furthermore, Army regulations state an EIS is required for proposed actions that have the potential to, "significantly affect a species or habitat listed or proposed for listing on the Federal list of endangered species" and "involve the . . . treatment . . . of hazardous or toxic materials that have significant environmental impact." 32 C.F.R. 651.29(f)(i). Ultimately, Part 651 of the C.F.R. relating to the Army and compliance with NEPA clearly suggests that the OB/OD facility requires an environmental impact statement. In addition, an EIS must be prepared pursuant to NEPA regulations for EOD training activities, because they would not be categorically exempted from preparation of an EIS.

Since 1980, the EPA has categorically exempted itself from filing a NEPA regulated EIS for all RCRA permits on the basis that a RCRA permit is "functionally equivalent" to an EIS. While the RCRA permit contains modelling information for future environmental risk assessment of the proposed action, it does not include scientific data concerning the past and present uses of the MMR, scientific sampling to determine current environmental conditions of Makua Valley, possible alternatives to the action, socio-economic impact analysis of the action, and community concerns. As such, the material in the RCRA permit is far from equivalent to a complete and comprehensive EIS that addresses the cumulative impacts of the proposed action.

In addition, this exemption has been granted only to the EPA, because of the specific nature of the EPA as the regulator and protector of the environment. As such, the military is not exempt from filing an EIS on the basis that it is functionally equivalent to a RCRA permit. The military's main mission is not devoted to the regulation and protection of the environment.

An environmental assessment for the proposed OB/OD operations at the MMR also is required pursuant to Chapter 343, Hawaii Revised Statues(HRS). According to Chapter 343-5, HRS, an environmental assessment shall be required for actions which: "Propose the use of state or county lands or the use of state or county funds...." The Makua Military Reservation and the OB/OD facility are located on lands owned by the State of Hawaii. Furthermore, because the activity may have a significant impact on threatened or endangered species an EIS is required under Chapter 343, HRS, and Section 11-200-12, Hawaii Administration Rules(HAR).

Conclusion

The OB/OD operations and other military activities, including EOD training, at the Makua Military Reservation trigger the requirements for an EIS under NEPA and Chapter 343, HRS. As such, a complete and comprehensive EIS must be prepared pursuant to state and federal guidelines for the preparation and contents of an EIS. This will consolidate the multitude of disparate information concerning the MMR and its past activities, the surrounding environment, and local community concerns. The preparation of an EIS should ultimately aid the process of full public disclosure and render better decision-making.

Thank you for the opportunity to comment on this draft RCRA permit. We hope our comments and suggestions are helpful.

Sincerely,

Jacquelin N. Miller

Jacquelin N. Miller
Associate Environmental Coordinator

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